

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the Application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for controlling a powder press, said method comprising the steps of:
 - controlling an introduction of a powder material into a die;
 - controlling a creation of a substantially uniform distribution of powder material in the die; and
 - controlling a pressing of the powder material in the die by controlling a pressure of a fluid provided to each of at least one piston that is operatively associated with each set of workpiece-forming punches therein controlling a magnitude of a pressing force applied by each of at least one set of workpiece-forming punches and by controlling a position of each set of workpiece-forming punches relative to the die.
2. (Original) The method as claimed in claim 1 wherein the step of controlling an introduction of the powder material comprises the step of controlling a weight of the powder material introduced into the die.
3. (Original) The method as claimed in claim 2 wherein the step of controlling the weight of the powder material introduced into the die comprises the steps of controlling a weight of a first powder material to be introduced into the die and controlling a weight of a second powder material to be introduced into the die.
4. (Original) The method as claimed in claim 1 wherein the step of controlling an introduction of the powder material comprises the step of controlling a temperature of the powder material to be introduced into the die.

-4-

5. (Original) The method as claimed in claim 1 wherein the step of controlling a creation of a substantially uniform distribution of powder material in the die comprises controlling a fluidization of the powder material within the die.
6. (Original) The method as claimed in claim 5 further comprising the step of heating a pressurized gas used to fluidize the powder material within the die.
7. (Cancelled)
8. (Original) The method as claimed in claim 1 wherein the step of controlling the pressing of the powder material in the die by controlling a magnitude of a pressing force applied by each set of workpiece-forming punches comprises the steps of determining a pressure of a fluid provided to each of at least one piston that is operatively associated with each set of workpiece-forming punches, comparing the pressure of the fluid provided to each piston to a pressure corresponding to a desired pressing force, and adjusting the pressure of the fluid provided to each piston based upon a result of the comparing step.
9. (Original) The method as claimed in claim 8 wherein the step of adjusting the pressure of the fluid provided to each piston comprises adjusting the pressure of the fluid provided to each piston such that the workpiece-forming punches form a workpiece having a substantially uniform density.
10. (Original) The method as claimed in claim 1 wherein the step of controlling the pressing of the powder material in the die by controlling a position of each set of workpiece-forming punches relative to the die comprises the steps of determining a position of each set of workpiece-forming punches, comparing the position of each set of workpiece-forming punches to a desired position, and adjusting a rate of travel of each set of workpiece-forming punches based upon a result of the comparing step.

11. (Original) The method as claimed in claim 1 wherein the step of controlling the pressing of the powder material in the die further comprises controlling a position of a first set of workpiece-forming punches relative to the die, and controlling a second set of workpiece forming punches relative to the die.
12. (Original) The method as claimed in claim 1 wherein said step of controlling the pressing of the powder material in the die comprises controlling the pressing of the powder material such that a finished part does not crack upon ejection, said controlling comprising the steps of:
 - pressing the powder material to a desired position; and
 - gradually reducing the pressing force applied by each of at least one set of workpiece-forming punches while maintaining the workpiece forming punches in a substantially fixed position such that the finished part is fully supported at all times prior to ejection; and
 - ejecting the finished part.
13. (Currently Amended) The method as claimed in claim + 56 wherein said step of controlling the lubrication of the die cavity comprises the steps of:
 - creating an enclosed die cavity;
 - introducing a lubricant into the die cavity; and
 - draining the lubricant from the die cavity.
14. (Cancelled)
15. (Cancelled)
16. (Cancelled)
17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

-7-

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (Cancelled)

37. (Cancelled)

38. (Cancelled)

39. (Cancelled)

40. (Cancelled)

41. (Cancelled)

42. (Cancelled)

43. (Cancelled)

44. (Cancelled)

45. (Cancelled)

46. (Cancelled)

47. (Cancelled)

48. (Cancelled)

49. (Cancelled)

50. (Cancelled)

51. (Cancelled)

52. (Cancelled)

53. (Cancelled)

54. (Cancelled)

55. (Cancelled)

56. (New) A method for controlling a powder press, said method comprising the steps of:

- controlling a lubrication of the die cavity;
- controlling an introduction of a powder material into a die;
- controlling a creation of a substantially uniform distribution of powder material in the die; and
- controlling a pressing of the powder material in the die by controlling a magnitude of a pressing force applied by each of at least one set of workpiece-forming punches and by controlling a position of each set of workpiece-forming punches relative to the die.

57. (New) The method as claimed in claim 56 wherein the step of controlling the pressing of the powder material in the die by controlling a magnitude of a pressing force applied by each set of workpiece-forming punches comprises the steps of determining a pressure of a fluid provided to each of at least one piston that is

-9-

operatively associated with each set of workpiece-forming punches, comparing the pressure of the fluid provided to each piston to a pressure corresponding to a desired pressing force, and adjusting the pressure of the fluid provided to each piston based upon a result of the comparing step.

58. (New) The method as claimed in claim 57 wherein the step of adjusting the pressure of the fluid provided to each piston comprises adjusting the pressure of the fluid provided to each piston such that the workpiece-forming punches form a workpiece having a substantially uniform density.
59. (New) A method for controlling a powder press, said method comprising the steps of:
- controlling an introduction of a powder material into a die;
 - controlling a creation of a substantially uniform distribution of powder material in the die; and
 - controlling a pressing of the powder material in the die by determining a pressure of a fluid provided to each of at least one piston that is operatively associated with each set of workpiece-forming punches, comparing the pressure of the fluid provided to each piston to a pressure corresponding to a desired pressing force, and adjusting the pressure of the fluid provided to each piston based upon a result of the comparing step therein controlling a magnitude of a pressing force applied by each of at least one set of workpiece-forming punches and by controlling a position of each set of workpiece-forming punches relative to the die.
60. (New) A method as claimed in claim 59 wherein the step of adjusting the pressure of the fluid provided to each piston comprises adjusting the pressure of the fluid provided to each piston such that the workpiece-forming punches form a workpiece having a substantially uniform density.

-10-

61. (New) A method for controlling a powder press, said method comprising the steps of:

controlling the lubrication of the die cavity by

creating an enclosed die cavity;

introducing a lubricant into the die cavity; and

draining the lubricant from the die cavity controlling an

introduction of a powder material into a die;

controlling a creation of a substantially uniform distribution of powder material in the die including;

controlling a fluidization of the powder material within the die;

and.

heating a pressurized gas used to fluidize the powder material within the die; and

controlling a pressing of the powder material in the die by determining a pressure of a fluid provided to each of at least one piston that is operatively associated with each set of workpiece-forming punches, comparing the pressure of the fluid provided to each piston to a pressure corresponding to a desired pressing force, and adjusting the pressure of the fluid provided to each piston based upon a result of the comparing step therein controlling a magnitude of a pressing force applied by each of at least one set of workpiece-forming punches and by controlling a position of each set of workpiece-forming punches relative to the die.

62. (New) A method as claimed in claim 61 wherein said step of controlling the pressing of the powder material in the die comprises controlling the pressing of the powder material such that a finished part does not crack upon ejection, said controlling comprising the steps of:

pressing the powder material to a desired position; and

gradually reducing the pressing force applied by each of at least one set of workpiece-forming punches while maintaining the workpiece forming punches in

-11-

a substantially fixed position such that the finished part is fully supported at all times prior to ejection; and
ejecting the finished part.